Value Networks and Quantitative Social Cost-Benefit Analysis in Telecommunications Access Networks

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Telecommunications is a domain that is characterized by a constant and rapid evolution. The available bandwidth keeps on increasing, the amount and quality of the offered services grows almost continuously. In the past, the telecommunication (telephone) networks in Europe were often owned by one (national and public) telecommunications operator: the incumbent (e.g. Belgacom in Belgium and KPN in the Netherlands). However, these actors don't seem to take the initiative for deploying future-proof fixed or wireless networks. Therefore, other (non-telecom related) actors, like municipalities or other utility networks are starting to invest in the deployment of such networks. Several successful deployed networks can be found in existing literature, for both wired and wireless cases.

When thinking about investing in new networks, it is important to have a good estimation of the costs for deploying end exploiting such a network, as well as what revenues these activities will bring along. Apart from the direct (monetary) revenues, the availability of a fast and reliable connection also entails a lot of other advantages, like the socio-economic impact on the development of the region. The significance of incorporating these indirect benefits is especially important for public actors such as municipalities or governments, who don't gain much direct monetary incomes.

The goal of this research is to conduct a Social Cost-Benefit Analysis (SCBA) in the domain of telecommunication networks that compares the cost for each individual actor to its revenues, taking into account the indirect benefits. This allows to evaluate if it would be profitable for both private and public actors to (actively or passively) participate in the deployment and exploitation of new access networks in Europe. This SCBA is a full techno-economic evaluation, that includes all direct and indirect costs and revenues for the deployment of a wired or wireless network, as well as allocation methods so that an evaluation of costs versus revenues can be done for each participating actor.

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